Syphilis

Syphilis, a genital ulcerative disease, facilitates the transmission of HIV and may be important in contributing to HIV transmission in those parts of the country, such as the South, where rates of both infections are high. Untreated early syphilis in pregnant women results in perinatal death in up to 40% of cases and, if acquired during the four years preceding pregnancy, may lead to infection of the fetus in over 70% of cases.[1]

The rate of primary and secondary (P&S) syphilis reported in the United States decreased during the 1990s and in 2000 was the lowest since reporting began in 1941 (Figure 20). The low rate of syphilis and the concentration of the majority of syphilis cases in a small number of geographic areas led to the development of the National Plan to Eliminate Syphilis from the United States, which was announced by Surgeon General David Satcher in October 1999.[2] Collaboration with diverse organizations, public health professionals, the private medical community, and other partners working in STD and HIV is essential for the success of this effort.[3]

The rate of P&S syphilis in the United States declined by 89.7% from 1990 through 2000. However, the rate of P&S syphilis increased slightly in 2001 (the first annual rate increase since 1990); this increase was observed only in men. Despite national progress toward syphilis elimination, particularly among African-Americans, syphilis remains an important problem in the South and in some urban areas in other regions of the country. Recently, outbreaks of syphilis among men who have sex with men (MSM) have been reported, possibly reflecting an increase in risky behavior in this population associated, in part, with the availability of highly active antiretroviral therapy for HIV infection.[4,5]

- In 2001, P&S syphilis cases reported to CDC increased to 6,103 from 5,979 in 2000, an increase of 2.1%. The reported rate of P&S syphilis in the United States in 2001 (2.2 cases per 100,000 population) was slightly higher than the rate reported in 2000 (2.1 cases per 100,000 population), and it is greater than the Healthy People 2010 (HP2010) objective of 0.2 case per 100,000 population (Figure 21, Table 1).[6]
- In 2001, P&S syphilis rates in nine states and one outlying area were less than or equal to the HP2010 national objective of 0.2 case per 100,000 population (Figure 22, Table 25). Ten states and one outlying area reported five or fewer cases of P&S syphilis in 2001 (Table 25).
- In 2001, 2,516 (80.2%) of 3,139 counties in the United States reported no cases of P&S syphilis compared with 2,520 (80.3%) counties reporting no cases in 2000. Of 623 counties reporting at least one case of P&S syphilis in 2001, 17 (2.7%) reported rates at or below the HP2010 objective of 0.2 case per 100,000 population. Rates of P&S syphilis were above the HP2010 objective for 606 counties in 2001 (Figure 23). These 606 counties (19.3% of the total number of counties in the U.S.) accounted for 99.6% of the total P&S syphilis cases reported in 2001.

- In 2001, half of the total number of P&S syphilis cases were reported from 20 counties and the city of Baltimore, MD (Table 26).
- The reported rate of P&S syphilis increased 15.4% among men (from 2.6 cases to 3.0 cases per 100,000 men) between 2000 and 2001 (Figure 25, Table 29). During this time, the rate declined 17.7% among women (from 1.7 to 1.4 cases per 100,000 women) (Figure 25, Table 28).
- The male-to-female rate ratio for P&S syphilis has risen steadily since 1996 when it was 1.1 (Figure 27). The male-to-female rate ratio in 2000 was 1.5:1; in 2001, the rate ratio was 2.1:1, suggesting an increase in syphilis among men who have sex with men.
- An increase in male-to-female rate ratio for P&S syphilis occurred in all racial/ethnic groups during 2000 to 2001. The male-to-female rate ratio for P&S syphilis increased from 1.8 to 6.0 in whites, from 1.4 to 1.7 in African-Americans, from 2.4 to 3.7 in Hispanics, from 5.0 to 10.0 in Asian/Pacific Islanders, and from 1.0 to 1.2 in American Indian/Alaska Natives (Table 35B).
- An increase in the male-to-female rate ratio for P&S syphilis occurred in the District of Columbia and in 16 (53.3%) of the 28 states and one outlying area that reported greater than or equal to 25 cases in 2001.
- In 2001, the South continued to have a higher rate of P&S syphilis (3.4 cases per 100,000 population) than any other region of the country. During 2000-2001, rates decreased 8.1% in the South (from 3.7 to 3.4 cases per 100,000 population) and 10.0% in the Midwest (from 2.0 to 1.8); they increased 40.0% in the West (from 1.0 to 1.4) and 57.1% in the Northeast (from 0.7 to 1.1). The 2001 reported rates in all regions were greater than the HP2010 objective of 0.2 case per 100,000 population (Figure 24, Table 27).
- The overall rate of P&S syphilis reported in 2001 for 63 selected large cities with populations of 200,000 persons or more in the U.S. (4.8 cases per 100,000 population) was 9.1% higher than the rate in 2000 (4.4). Rates exceeded the HP2010 objective of 0.2 case per 100,000 population in 59 (93.7%) of these 63 cities (Tables 30 and 31).
- Between 2000 and 2001, the rates of P&S syphilis declined among African-Americans (from 12.2 cases per 100,000 population in 2000 to 11.0 in 2001) but increased among whites (from 0.5 to 0.7), Hispanics (from 1.6 to 2.1), Asian/Pacific Islanders (from 0.3 to 0.5), and American Indian/Alaska Natives (from 2.4 to 4.2) (Figure 26, Table 35B).
- In 2001, the rate of P&S syphilis reported in African-Americans (11.0 cases per 100,000 population) was 16 times greater than the rate reported in whites (0.7 case per 100,000 population). This differential was substantially less than that in 1997, when the rate of P&S syphilis among African-Americans was 44 times greater than the rate reported among whites (Table 35B). Declining differential rates between African-Americans and whites between 1997 and 2001 are due to consistent decreases in rates in African-Americans during this period in conjunction with an increase in rates in whites in 2001.
- The incidence of P&S syphilis was highest among women aged 20-24 years (3.8 cases per 100,000 population) and among men aged 35-39 (7.2 cases per 100,000 population) (Figure 28, Table 34).

- Between 2000 and 2001, the overall rate of congenital syphilis decreased by 20.7% in the U.S., from 14.0 to 11.1 cases per 100,000 live births (Figure 29, Table 42). In addition, among the 18 states and outlying areas with five or more reported cases of congenital syphilis in 2000, 10 had rates that decreased since 2000. Five of these states had rate decreases of 30% or more between 2000 and 2001 (Table 42).
- The continuing decrease in the rate of congenital syphilis (Figure 30) likely reflects the substantial reduction in the rate of P&S syphilis among women that has occurred in the last decade (Figure 29).[7] During the period from 1991 through 2001, the average yearly percentage decrease in the congenital syphilis rate was 19.8% (Table 40). The average yearly percentage decrease in the rate of P&S syphilis reported among women for the years 1991 through 2001 was 20.8%.
- In 2001, 27 states and three outlying areas had reported rates of congenital syphilis that exceeded the HP2010 objective of 1.0 case per 100,000 live births (Tables 41 and 42).
- Thirty-four (54.0%) of the 63 selected cities with populations of 200,000 persons or more had congenital syphilis rates for 2001 greater than the HP2010 objective of 1.0 case per 100,000 live births (Table 43). All of these cities had reported rates that were more than six times the HP2010 objective.
- Additional information on syphilis and congenital syphilis can be found in the **Special Focus Profiles**.

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[1] Ingraham NR. The value of penicillin alone in the prevention and treatment of congenital syphilis. *Acta Derm Venereol* 31 (suppl 24): 60, 1951.

[2] Division of STD Prevention. *The National Plan to Eliminate Syphilis from the United States*. National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention, 1999.

[3] Centers for Disease Control and Prevention. Primary and secondary syphilis – United States, 1999. *MMWR* 2000;50:113-117.

[4] Centers for Disease Control and Prevention. Resurgent bacterial sexually transmitted disease among men who have sex with men – King County, Washington, 1997-1999. *MMWR* 1999; 48:773-777.

[5] Centers for Disease Control and Prevention. Outbreak of syphilis among men who have sex with men - Southern California, 2000. *MMWR* 2001; 50(7): 117-20.

[6] U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.

[7] Centers for Disease Control and Prevention. Congenital Syphilis – United States, 2000. *MMWR* 2001;50(27):573-77.

Figure 20. Syphilis — Reported cases by stage of illness: United States, 1941–2001

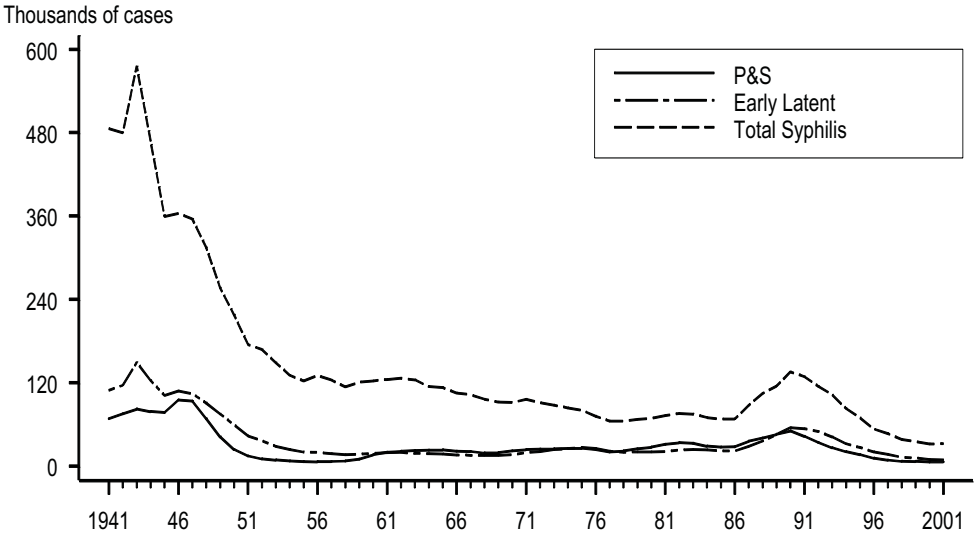
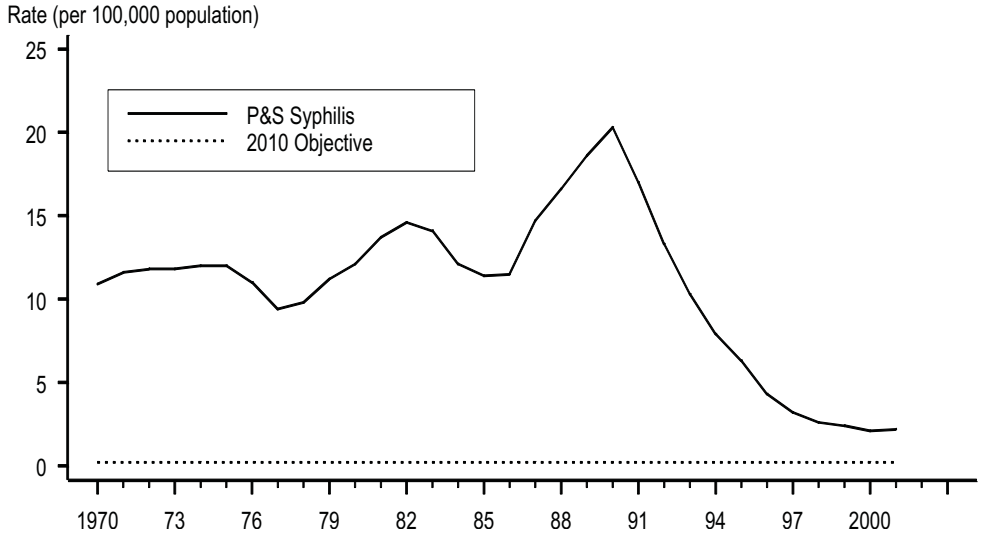
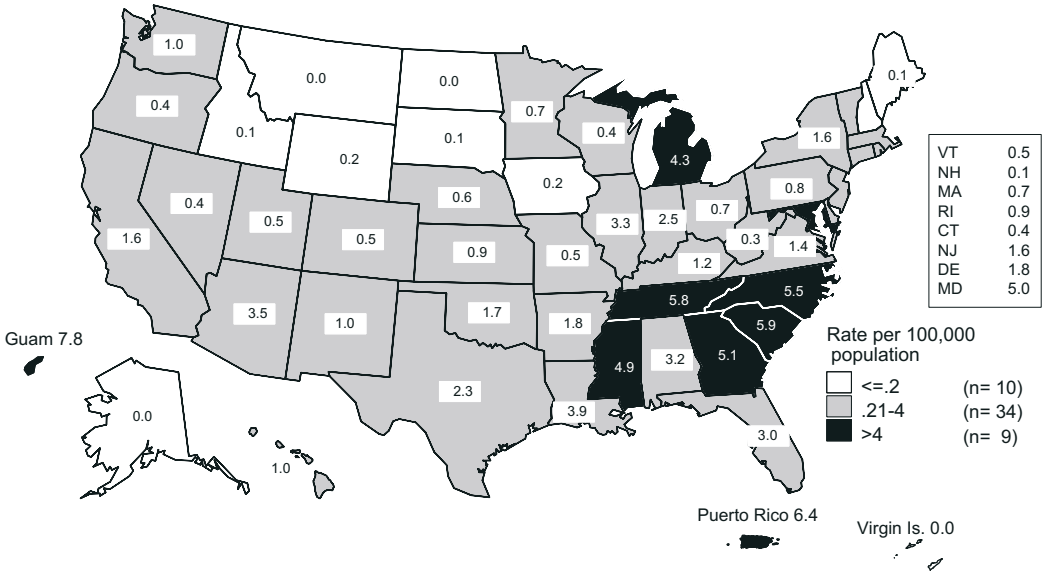


Figure 21. Primary and secondary syphilis — Reported rates: United States, 1970–2001 and the Healthy People year 2010 objective



Note: The Healthy People 2010 (HP2010) objective for primary and secondary syphilis is 0.2 case per 100,000 population.

Figure 22. Primary and secondary syphilis — Rates by state: United States and outlying areas, 2001



Note: The total rate of primary and secondary syphilis for the United States and outlying areas (including Guam, Puerto Rico and Virgin Islands) was 2.2 per 100,000 population. The Healthy People year 2010 objective is 0.2 per 100,000 population.

Figure 23. Primary and secondary syphilis — Counties with rates above and counties with rates below the Healthy People year 2010 objective: United States, 2001

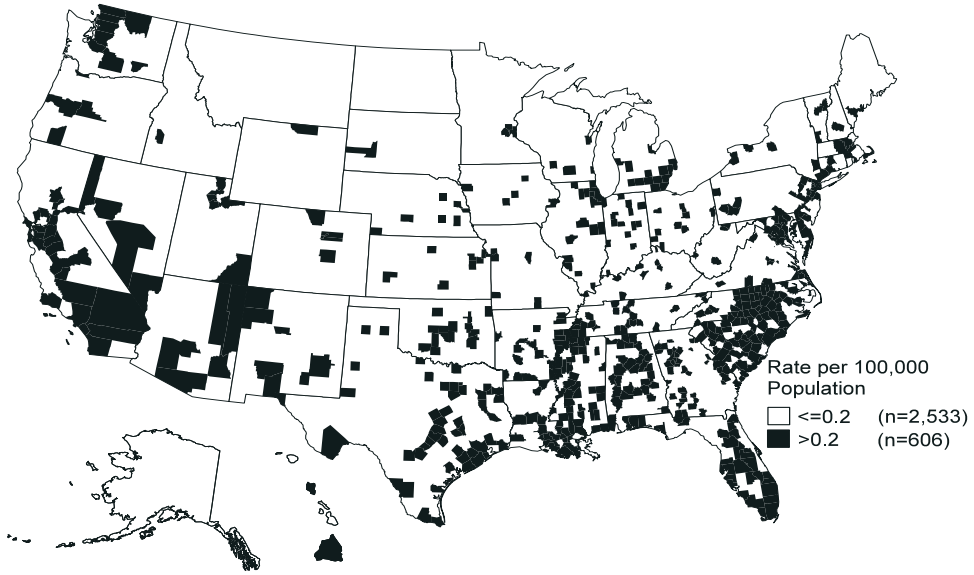


Figure 24. Primary and secondary syphilis — Rates by region: United States, 1981–2001 and the Healthy People year 2010 objective

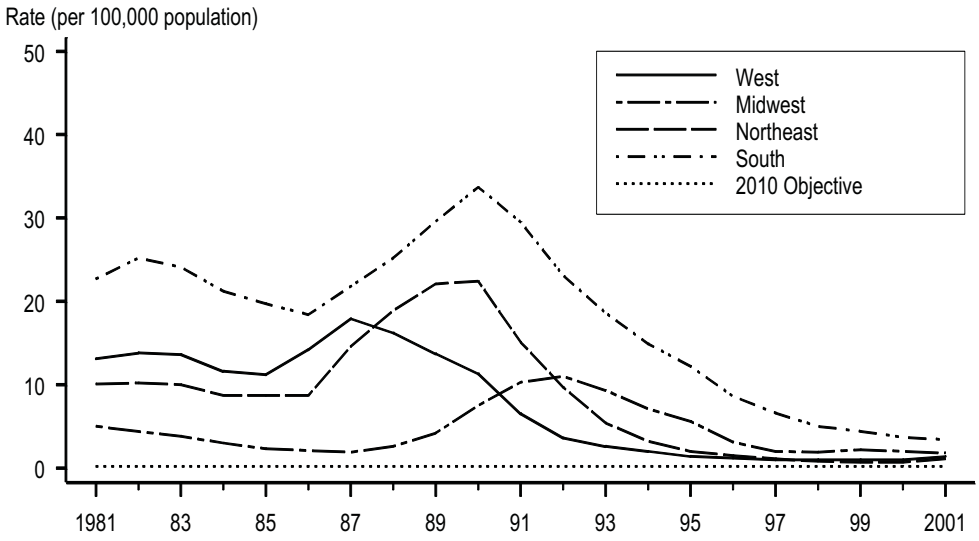


Figure 25. Primary and secondary syphilis — Rates by sex: United States, 1981–2001 and the Healthy People year 2010 objective

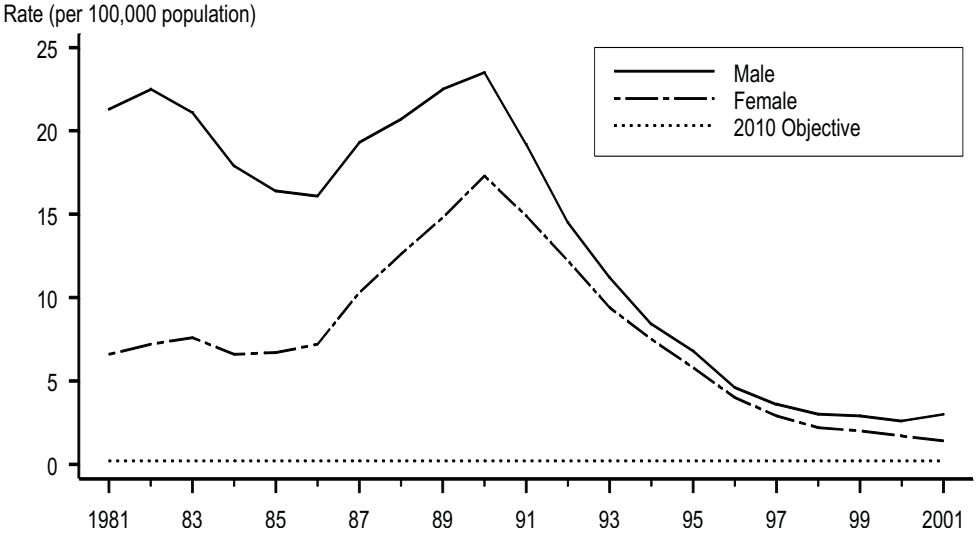


Figure 26. Primary and secondary syphilis — Rates by race and ethnicity: United States, 1981–2001 and the Healthy People year 2010 objective

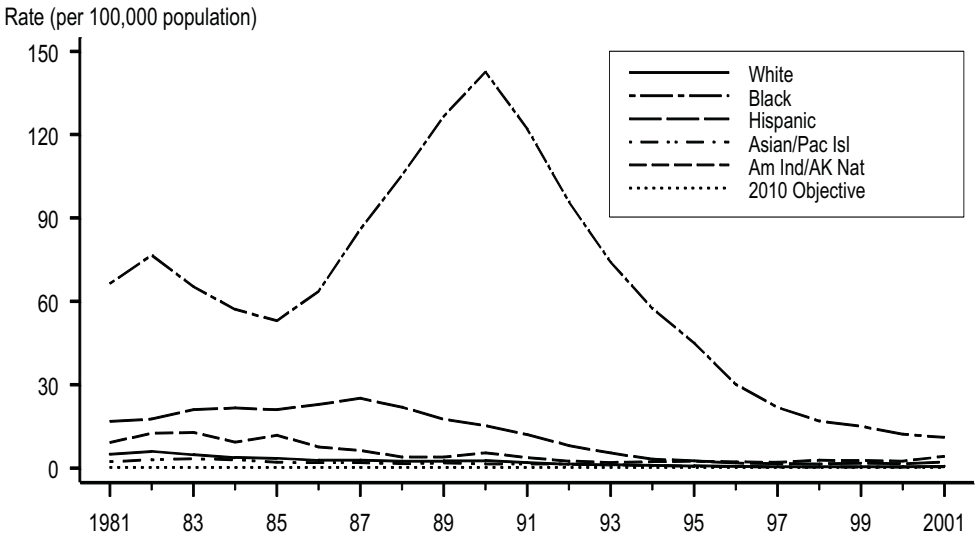


Figure 27. Primary and secondary syphilis — Male to female rate ratios: United States, 1981–2001

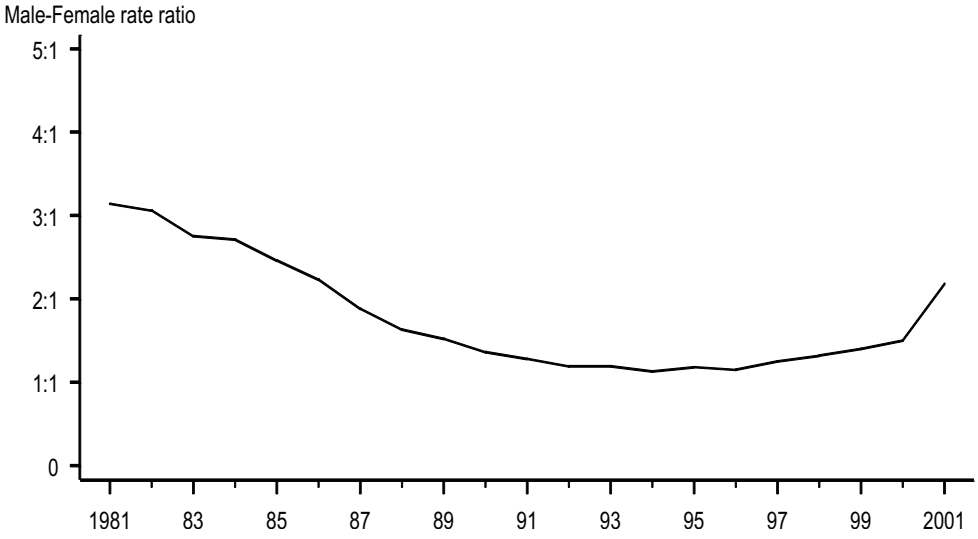
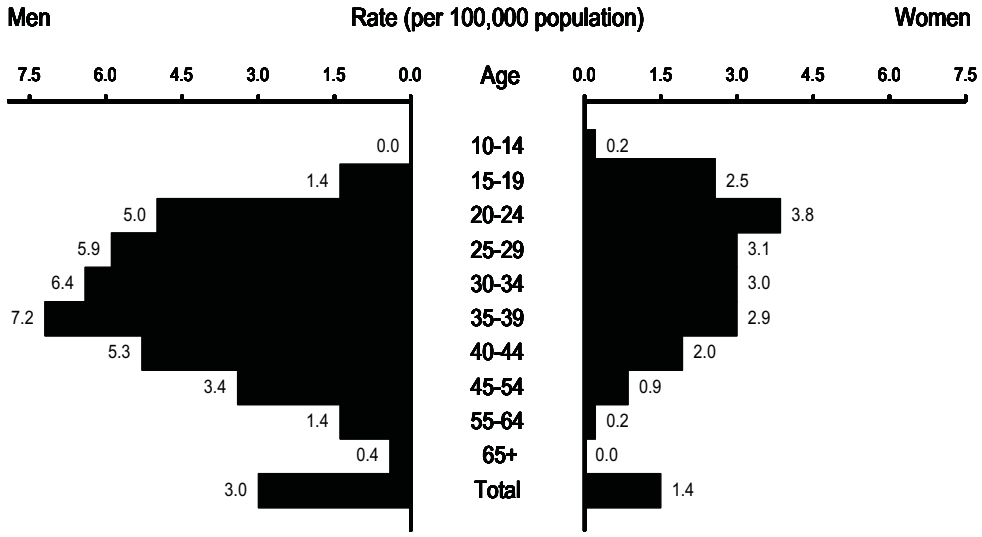
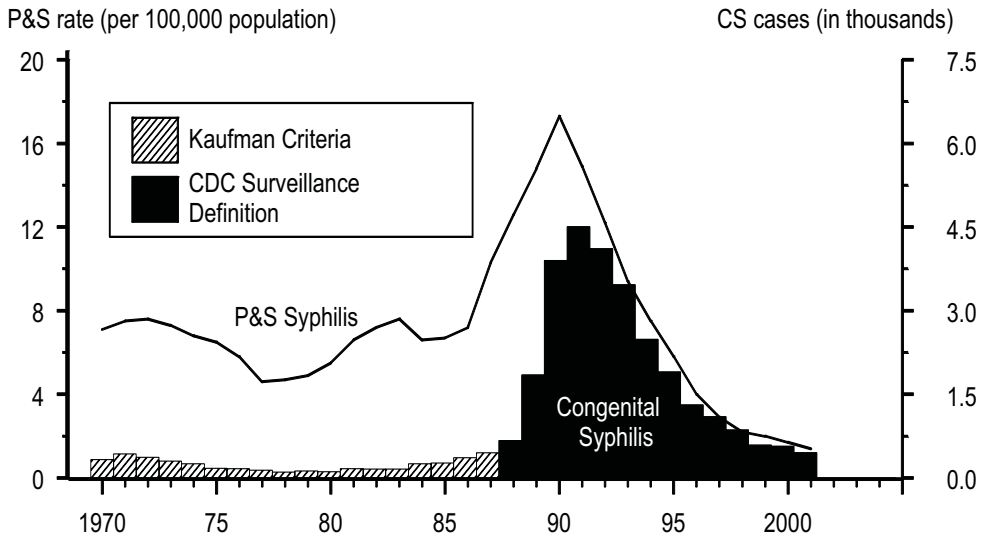


Figure 28. Primary and secondary syphilis — Age- and sex-specific rates: United States, 2001



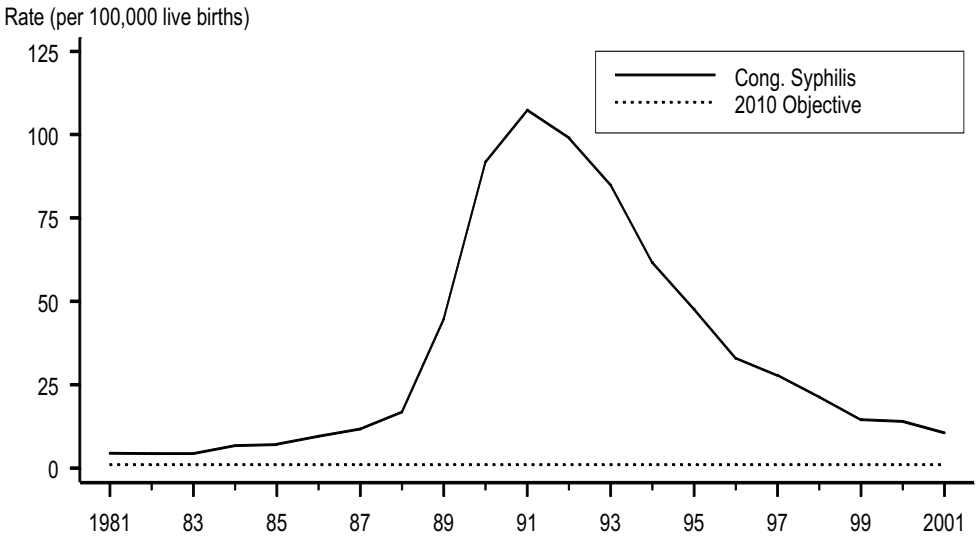
Note: See Table 34 and Appendix for more information.

Figure 29. Congenital syphilis — Reported cases for infants <1 year of age and rates of primary and secondary syphilis among women: United States, 1970–2001



Note: The surveillance case definition for congenital syphilis changed in 1988 (see Appendix). Case counts for congenital syphilis shown in this graph correspond to those listed in Table 40.

Figure 30. Congenital syphilis — Rates for infants <1 year of age: United States, 1981–2001 and the Healthy People year 2010 objective



Note: The Healthy People 2010 (HP2010) objective for primary and secondary syphilis is 0.2 case per 100,000 population. The surveillance case definition for congenital syphilis changed in 1988 (see Appendix).